IOWA DEPARTMENT OF NATURAL RESOURCES

WATER SUMMARY UPDATE

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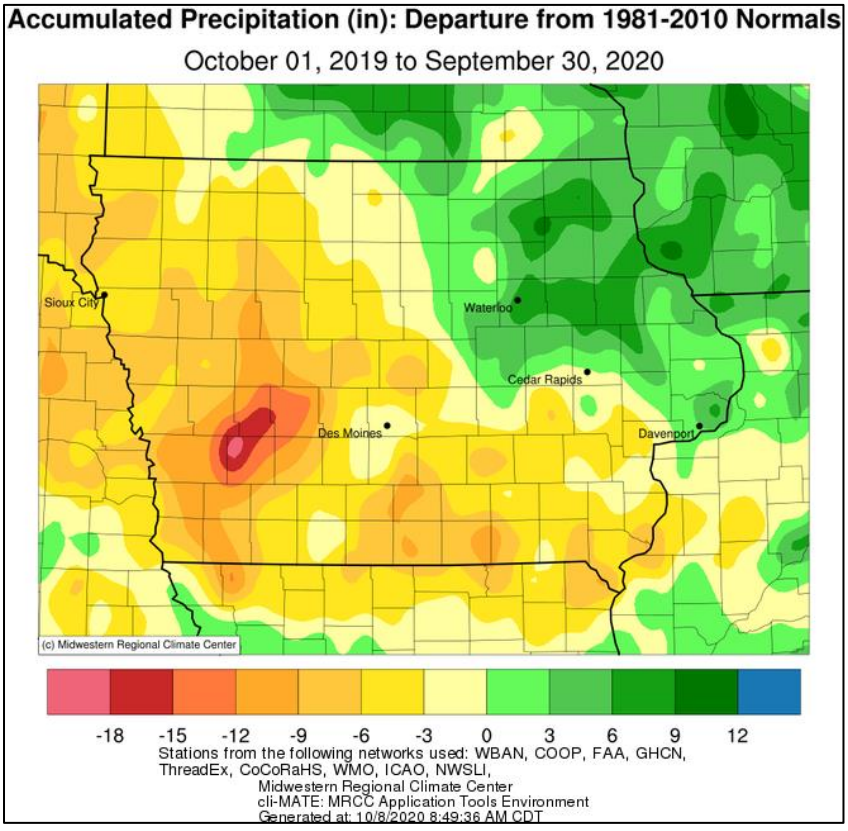
A snapshot of water resource trends for the 2020 Water Year

2020 Water Year Summary

OVERVIEW – WATER YEAR ENDS WITH DROUGHT CONDITIONS INCREASING

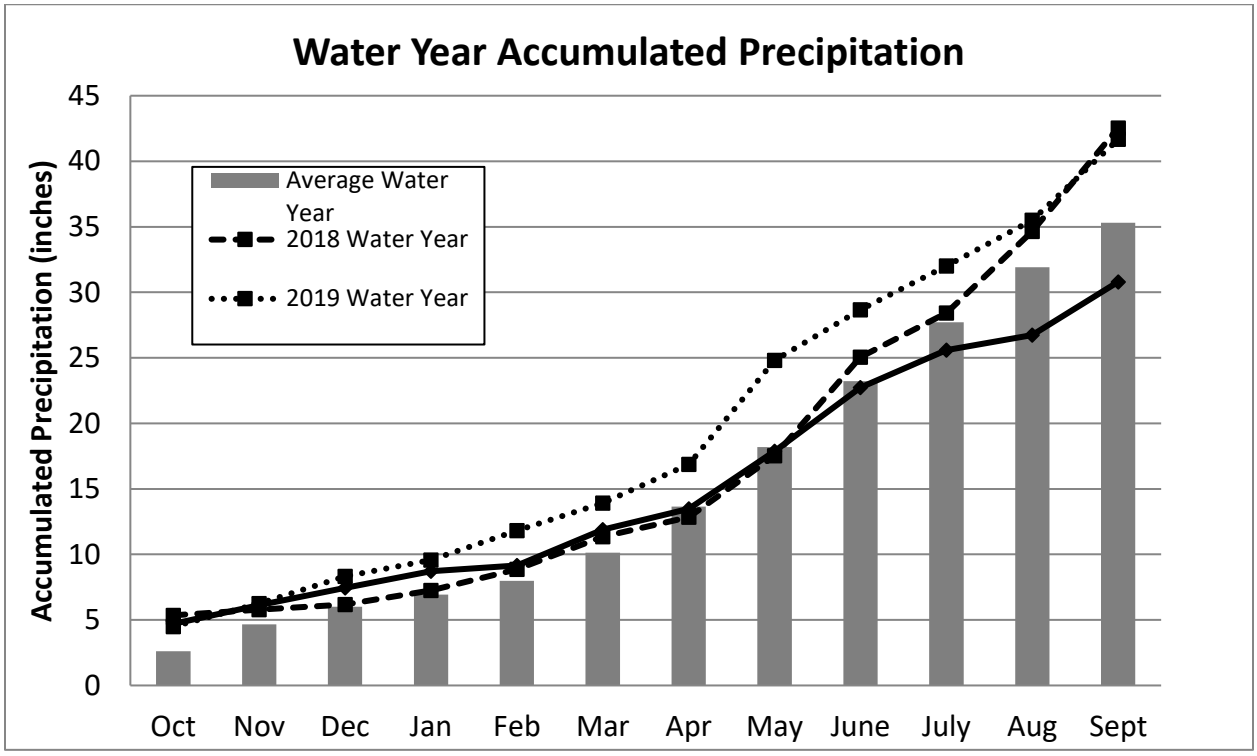
The "Water Year" is defined as the period between October 1st and September 30th. This period of time is used because accumulating snow is the primary source of water runoff into streams during the next calendar year for many parts of the United States. The 2020 Water Year ended on September 30th, 2020 and precipitation for the water year was 31.51 inches, or 3.76 inches below normal across the state. Temperatures averaged 48.6 degrees, which is 0.5 degrees above normal for Iowa. This was the 55th driest and 35th warmest Water Year among the observational records. October 2019 was the 8th wettest, February 2020 was the 13th driest while August was the 3rd driest on record.



A majority of Iowa received below normal precipitation over the 2020 Water Year with only northeastern Iowa receiving above average totals on the order of three to nine inches. For the remaining portions of the state precipitation deficits dominated, especially in western Iowa where departures were between 10 to 18 inches

below normal. A dry weather pattern began to take hold across western Iowa during late spring and persisted through the summer. During this time, drought conditions were introduced across west-central Iowa. Drought conditions continued to expand in all directions through August with 99% of Iowa covered by abnormally dry (D0) to severe drought (D3) conditions as of the start of September. Widespread rainfall across much of the state halted drought expansion in early September. Wetter than normal conditions in eastern Iowa removed much of the drought and abnormally dry conditions.

The graph below shows the contrast between the 2018, 2019, and 2020 water years. In both 2018 and 2019 the water years ended with accumulated precipitation of around 42 inches. 2020 ended the water year with accumulated precipitation just above 30 inches, or about a foot less than both of the prior water years.

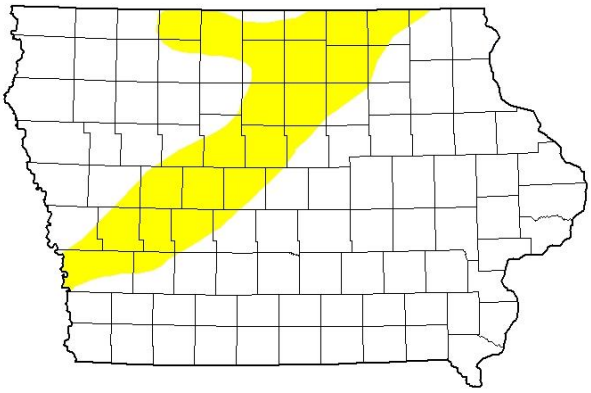


DROUGHT MONITOR

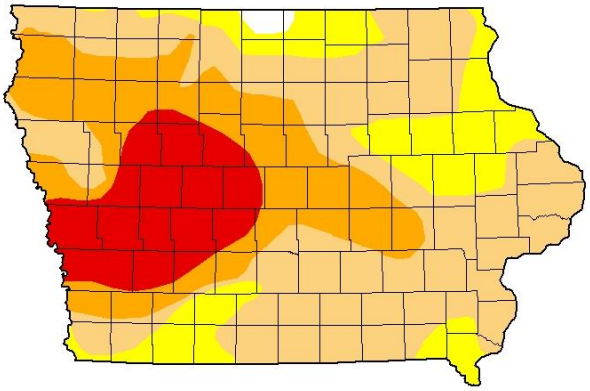
The National Drought Monitor (NDM) provides a good way to see regional and statewide trends in drought conditions. At the start of the water year the entire state was free from any drought or dryness. The first signs of unusual conditions occurred with the May 12, 2020 drought monitor map, which showed 20 percent of the state in abnormally dry conditions. As summer progressed, the drought monitor showed deteriorating conditions week after week until the worst conditions occurred on September 1, 2020, with almost the entire state in some form of dryness or drought, and nearly 15 percent of Iowa rated in D3 – Extreme Drought, the second to worst category for drought conditions. The worst of the drought conditions during this water year have consistently been in west central and western Iowa, where some Audubon, Carroll, Guthrie, Greene, and Shelby Counties experienced their driest April to September period in 126 years of records.

The current drought monitor map which reflects conditions as of October 6, 2020 shows a return of D3 drought conditions, this time to counties in northwest Iowa. About 5 percent of the state is rated in D3, while conditions have been moved from D1 into D2 in other parts of northwest and western Iowa. Overall, the area of Iowa covered by some form of dryness or drought has not changed.

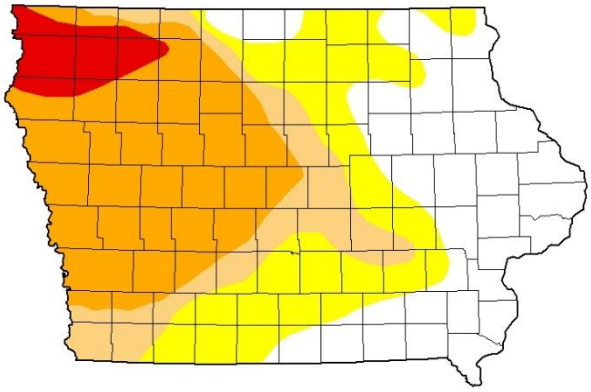
Drought Monitor - National Drought Mitigation Center and partners



May 12, 2020



September 1, 2020



October 6, 2020

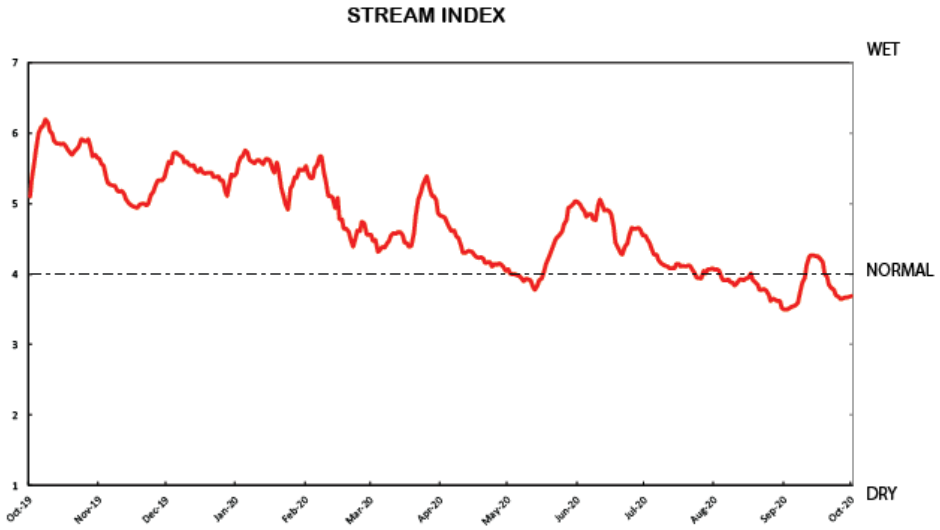
Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

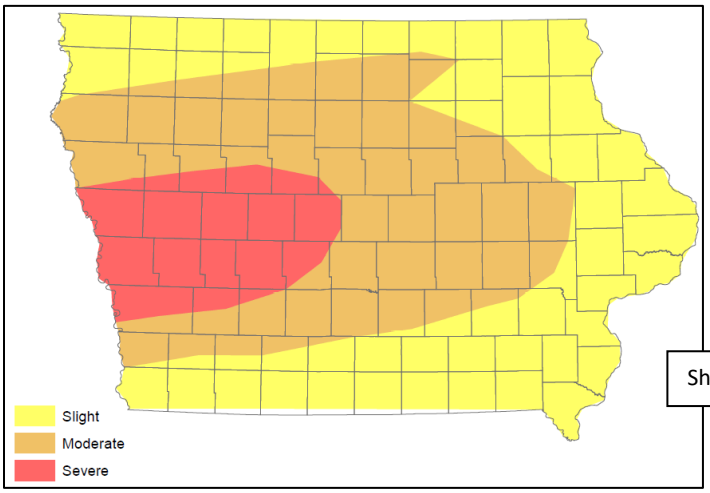
STREAMFLOW

The U.S. Geological Survey (USGS) streamflow index is an average of streamflows at all USGS streamgages across the state compared to the average streamflow at all those points at that time. Average streamflow is typically much lower in the winter than in the spring and early summer. The 2020 Water Year began with above normal streamflows as a result of the wet 2019 Water Year, but as the year progressed average streamflow trended down. In late May average streamflow dropped into the dryer than normal range, the first time that happened since January 2019. A wet June pushed average streamflow back above normal, but the summer and early fall dryness has resulted in streamflows generally staying below normal since early August.



SHALLOW GROUNDWATER

At the start of the water year there were no areas of concern for shallow groundwater, but by April the west central parts of Iowa were beginning cause concern. By July 2020 areas of moderate concern existed in Iowa, primarily focused on the west central parts of the state. By August and September shallow groundwater conditions had deteriorated to the point where severe groundwater conditions exist in West Central Iowa, while moderate to slight groundwater conditions exist in the remainder of Iowa. Low groundwater levels are found throughout the state, especially along the Raccoon and Skunk rivers in Central Iowa and along the Ocheyedan and Floyd rivers in Northwest Iowa. Particular concern exists in areas where deeper groundwater resources are not available.



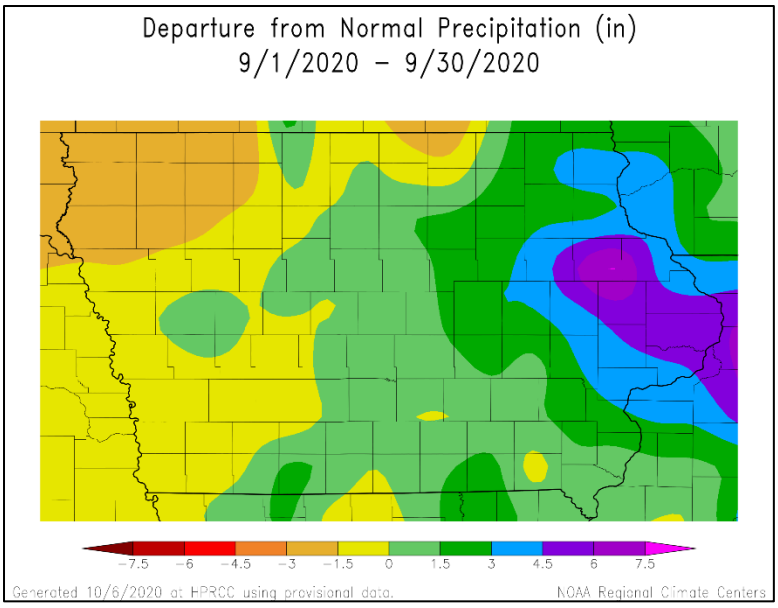
Shallow Groundwater Conditions – Sept. 2020

SEPTEMBER PRECIPITATION AND TEMPERATURE

Temperatures were generally cooler across Iowa during September with a statewide average temperature of 61.9 degrees, 1.3 degrees below normal. September 2020 ranks as the 39th coldest on record with a colder September last occurring in 2011. Spencer Municipal Airport (Clay County) reported the month's high temperature of 96 degrees on the 6th, 18 degrees above normal. Mason City Municipal Airport (Cerro Gordo County) reported the month's low temperature of 35 degrees on the 18th, 12 degrees below normal.

After the third driest August on record, widespread rainfall returned to Iowa during September 2020. The statewide average precipitation totaled 4.06" or 0.68" more than the 30-year climatological expectation. The month ranked as the 55th wettest September in 148 years of statewide records with a wetter one occurring just last year.

Much of the eastern two-thirds of Iowa reported above average precipitation totals with the highest amounts occurring in eastern Iowa; four to six inches of above average rainfall were recorded across more than ten counties. On the other side of the state, precipitation deficits from one to two inches were found. Northwest Iowa observed the driest conditions of two or more inches below normal. Monthly precipitation totals ranged from 0.51 inch at Rock Valley (Sioux County) to 11.75 inches at Monticello (Jones County).



ADDITIONAL INFORMATION

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